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CLAIMS

1. A cable (PCA) having a screen (PSC) with a water sensing wire (WSW), said water sensing wire (WSW) comprising:

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a) a conductor (WC); and

b) a water permeable insulation (WI) surrounding said conductor (WC);

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characterized in that

c) said conductor (WC) is formed by a plurality of metal wires (WW).

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2. A cable according to claim 1,
characterized in that

said plurality of wires (WW) are stranded according to a predetermined length of pitch (WPL) and direction of pitch (WPD).

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3. A cable according to claim 1,
characterized in that
said conductor (WC) is a Litz-wire.

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4. A cable according to claim 1,
characterized in that

inside said water permeable insulation (WI) one or more polymer filaments (WRFI) are contained as reinforcement.

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5. A cable according to claim 4,
characterized in that

said polymer filaments (WRFI) are substantially parallel to said conductor (WC).

- 5 6. A cable according to claim 1,
characterized in that
said water permeable insulation (WI) is constituted by
an insulating braiding (WBRA).
- 10 7. A cable according to claim 1,
characterized in that
said plurality of wires (WW) forming said conductor (WC)
are Cu wires.
- 15 8. A cable according to claim 1,
characterized in that
said polymer filaments (WRFI) are made of Aramid® or
Kevlar®.
- 20 9. A cable according to claim 1,
characterized in that
said insulating braiding (WBRA) is made of polyester or
polyamide.
- 25 10. A cable according to claim 1,
characterized in that
said polymer filaments (WRFI) and said conductor (WC)
have an elasticity module (E1, E3) such that up to a
limit force (F2), at which an elastic deformation of
30 said polymer filaments changes into a plastic
deformation, only an elastic deformation is applied to
said conductor (WC).
11. A cable (PCA) according to claim 1, wherein said cable
35 is a power cable.
12. A cable (PCA) having a screen (PSC) with a water sensing
wire (WSW), said water sensing wire (WSW) comprising:

5 a) a conductor (WC); and

 b) a water permeable insulation (WI) surrounding said
 conductor (WC);

10 *characterized in that*

 c) said conductor (WC) is constituted in such a manner
 that it has a variable deformable cross section
 during application of radial stress.

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13. A cable (PCA) according to claim 13 or 2,

characterized in that

20 said conductor (WC) is formed by a plurality of metals
 wires (WW) having air cavities therebetween.

14. A cable (PCA) according to claim 12, 13 or 1,

25 *characterized in that*

 a plurality of reinforcement filaments (WRFI) are
 provided inside said insulation (WI).

30 15. A cable (PCA) according to claim 14,

characterized in that

35 said metal wires (WW) and said reinforcement filaments
 (WRFI) are arranged such that air cavities are formed
 between said metal wires (WW) and said reinforcement
 filaments (WRFI).

5 16. A water sensing wire (WSW) for a cable (PCA),
comprising:

a) a conductor (WC); and

10 b) a water permeable insulation (WI) surrounding said
conductor (WC);

characterized in that

15 c) said conductor (WC) is formed by a plurality of
metal wires (WW).

17. A water sensing wire (WSW) for a cable (PCA),
comprising:

20 a) a conductor (WC); and

b) a water permeable insulation (WI) surrounding said
conductor (WC);

25 *characterized in that*

c) said conductor (WC) is constituted in such a manner
that it has a variable deformable cross section
30 during application of radial stress.

5 18. A cable (PCA) having a screen (PSC) with a water sensing wire (WSW), said water sensing wire (WSW) comprising:

a) a conductor (WC);

10 b) a water permeable insulation (WI) surrounding said conductor (WC),

characterized in that

15 c1) said conductor (WC) is a single metal wire (WW);
and

c2) one or more reinforcement filaments (WRFI) are
provided inside said water permeable insulation
20 (WI).

19. A water sensing wire (WSW) for a cable (PCA) comprising:

a) a conductor (WC);

25 b) a water permeable insulation (WI) surrounding said conductor (WC),

characterized in that

30 c1) said conductor (WC) is a single metal wire (WW);
and

c2) one or more reinforcement filaments (WRFI) are
provided inside said water permeable insulation
35 (WI).